

In the claims:

For the convenience of the Examiner, all claims being examined, whether or not amended, are presented below.

1-13. (Cancel)

14. (Currently amended) ~~A vector including a DNA construct~~ The composition of claim 22, wherein each of said constructs is provided in a vector including ~~and~~ a selectable marker permitting transfection of the ~~DNA~~ construct into host cells and selection of transfectants containing the construct.

15-17. (Cancel)

18. (Currently amended) A mammalian cell which contains and expresses the nucleic acid composition ~~at least one nucleic acid construct~~ of claim 22, 23, or 49.

19-21. (Cancel)

22. (Currently amended) A nucleic acid composition comprising at least two genetic constructs, each encoding a chimeric protein,

- (a) a first construct encoding a first chimeric protein comprising at least one ligand-binding domain and a transcriptional activation domain which is heterologous thereto,
- (b) a second construct encoding a second chimeric protein comprising at least one ligand-binding domain which may be the same or different from a ligand binding domain of the first chimeric protein, and a DNA binding domain which is heterologous thereto,

wherein the first and second of said chimeric proteins together (i) bind to a ligand to form a ligand cross-linked protein complex, and (ii) in a ligand dependent manner, activate transcription of a gene having a transcriptional regulatory element to which the DNA binding domain binds.

23. **(Currently amended)** A nucleic acid composition comprising at least two genetic constructs, each encoding a chimeric protein,

- (a) a first construct encoding a first chimeric protein comprising at least one ligand-binding domain and a signal initiation domain which is heterologous thereto; and,
- (b) a second construct encoding a second chimeric protein comprising at least one ligand-binding domain which may be the same or different from a the ligand binding domain of the first chimeric protein, and an intra-cellular localization domain which is heterologous thereto,

wherein the first and second of said chimeric proteins together (i) bind to a ligand to form a ligand cross-linked protein complex, and (ii) in a ligand dependent manner, activate an intra-cellular signaling pathway.

24-48. **(Cancel)**

49. **(Currently amended)** A nucleic acid composition comprising at least two genetic constructs, each encoding a chimeric protein,

- (a) a first construct encoding a first chimeric protein comprising at least one ligand-binding domain, a signal initiation domain which is heterologous thereto, and a cytoplasmic domain of a cell surface receptor; and,
- (b) a second construct encoding a second chimeric protein comprising at least one ligand-binding domain which may be the same or different from a the ligand binding domain of the first chimeric protein, a signal initiation domain which is heterologous thereto and which may be the same or different from a the signal initiation domain of the first chimeric protein, and a cytoplasmic domain of a cell surface receptor which may be the same or different from a the cytoplasmic domain of a cell surface receptor of the first chimeric protein,

wherein the first and second of said chimeric proteins together (i) bind to a ligand to form a ligand cross-linked protein complex, and (ii) in a ligand dependent manner, activate a cellular signaling pathway.

50. **(Previously presented)** The composition of claim 23, wherein the intra-cellular localization domain is a nuclear localization domain.
51. **(Previously presented)** The composition of claim 23, wherein the intra-cellular localization domain is a cytoplasmic localization domain.
52. **(Previously presented)** The composition of claim 23, wherein the intra-cellular localization domain comprises a secretory leader sequence, a membrane retention domain, a nuclear localization domain, or a vesicle targeting domain.
53. **(Previously presented)** The composition of claim 52, wherein the membrane retention domain comprises a plasma membrane targeting sequence for attachment of a myristoyl moiety or a prenyl moiety.
54. **(Previously presented)** The composition of claim 49 in which the ligand-binding domain of at least one of the chimeric proteins is an FKBP domain.
55. **(Currently amended)** The composition of claim 49 in which the ligand-binding domain of at least one of the chimeric proteins is ~~a variant of an FKBP domain~~, wherein said FKBP domain comprises FKBP12 or a variant thereof, and wherein said variant comprises substitution of one or more of Tyr26, Phe36, Asp37, Tyr82 and Phe99 with another amino acid residue.
56. **(Cancel)**
57. **(Currently amended)** The composition of claim 49 in which the ligand binding domain of at least one of the chimeric proteins specifically binds to FK506, FK520, rapamycin, or a derivative of FK506, FK520, or rapamycin ~~either~~.
58. **(Previously presented)** The composition of claim 49 in which the cytoplasmic domain of a cell surface receptor is selected from the group consisting of a tyrosine kinase receptor, a cytokine receptor and a growth factor receptor.

59. **(Previously presented)** The composition of claim 49 in which the cytoplasmic domain of a cell surface receptor is selected from the group consisting of a Fas receptor and a TNF receptor.

60. **(Previously presented)** The composition of claim 22 in which the ligand-binding domain of at least one of the chimeric proteins is an FKBP domain.

61. **(Currently amended)** The composition of claim 22 in which the ligand-binding domain of at least one of the chimeric proteins is ~~a variant of~~ an FKBP domain, wherein said FKBP domain comprises FKBP12 or a variant thereof, and wherein said variant comprises substitution of one or more of Tyr26, Phe36, Asp37, Tyr82 and Phe99 with another amino acid residue.

62. **(Cancel)**

63. **(Currently amended)** The composition of claim 22 in which the ligand binding domain of at least one of the chimeric proteins specifically binds to FK506, FK520, rapamycin, or a derivative of FK506, FK520, or rapamycin ~~either~~.

64. **(Previously presented)** A eukaryotic cell containing and capable of expressing at least one nucleic acid construct of claim 22, 23, or 49.

65. **(Previously presented)** The composition of claim 23 in which the ligand binding domain of at least one of the chimeric proteins is an FKBP domain.

66. **(Currently amended)** The composition of claim 23 in which the ligand-binding domain of at least one of the chimeric proteins is ~~a variant of~~ an FKBP domain, wherein said FKBP domain comprises FKBP12 or a variant thereof, and wherein said variant comprises substitution of one or more of Tyr26, Phe36, Asp37, Tyr82 and Phe99 with another amino acid residue.

67. **(Cancel)**

68. **(Currently amended)** The composition of claim 23 in which the ligand binding domain of at least one of the chimeric proteins specifically binds to FK506, FK520, rapamycin, or a derivative of FK506, FK520, or rapamycin ~~either~~.

69. **(Previously presented)** The composition of claim 23 or 49 in which the activation of a cellular signaling pathway regulates, in a ligand dependent manner, at least one of cell proliferation, differentiation, or death.